Patent Application Serial No. 08/705,043, filed August 29, 1996, now U.S. Patent No. 6,130,602, which issued on October 10, 2000, and incorporated herein by reference, which describes such active systems in detail. One such system is sold by Micron Communications Inc., 3176 S. Denver Way, Boise, Idaho 83705 under the trademark Microstamp Engine (TM).--.

In the Claims

Please replace the claims with the following clean version of the entire set of pending claims, in accordance with 37 C.F.R. § 1.121(c)(1)(I).

A marked up version showing amendments to any claims being changed is provided in one or more accompanying pages separate from this amendment in accordance with 37 C.F.R. § 1.121(c)(1)(ii).

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14. An interrogator of a backscatter communication system comprising:

a transmitter configured to output a local continuous wave signal and a radio frequency continuous wave signal; and

a receiver configured to receive the local continuous wave signal and a modulated radio frequency continuous wave signal, the receiver including:

a phase shifter configured to adjust a phase angle of the local continuous wave signal by a phase shift angle, the phase shifter including a first power divider configured to provide a first component and a second component of the local continuous wave signal, plural mixers configured to scale the first component and the second component using the phase shift angle, and a second power divider configured to combine the scaled first component and the scaled second component to provide an adjusted continuous wave signal; and

a coupler configured to combine the adjusted continuous wave signal and the modulated radio frequency continuous wave signal.

15. The interrogator according to claim 14 wherein the first power divider is configured to provide the signal into quadrature components.

16. The interrogator according to claim 14 wherein the first power divider comprises a ninety degree power divider configured to provide the signal into a sine component and a cosine component.

17. 14 The interrogator according to claim 14 16 further comprising a storage device configured to store plural sine values and plural cosine values and output a sine value and a cosine value individually corresponding to the phase shift angle.

18. 15 The interrogator according to claim 14 1 further comprising a storage device configured to store a sine value and a cosine value individually corresponding to the phase shift angle.

19. 16 The interrogator according to claim 18 15 wherein the mixers are coupled with the storage device and individually configured to multiply one of the first and second components by one of the sine value and the cosine value.

20. 17 The interrogator according to claim 14 1 wherein the second power divider comprises a zero degree power divider configured to add the scaled first component and the scaled second component.

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35. A method of operating a coherent interrogator of a backscatter communication system comprising:

outputting a radio frequency continuous wave signal;

providing a local continuous wave signal;

receiving a modulated continuous wave signal;

providing a phase shift angle;

adjusting the phase of the local continuous wave signal using the phase shift angle to provide an adjusted continuous wave signal, the adjusting including:

providing the local continuous wave signal into a first component and a second component;

scaling the first component using the phase shift angle;

scaling the second component using the phase shift angle; and

combining the first component and the second component after the scalings to shift the phase angle of the local continuous wave signal by the phase shift angle; and

combining the adjusted continuous wave signal and the modulated continuous wave signal.

36. 10 The method according to claim 35 9 wherein the providing the signal into a first component and a second component comprises providing the signal into quadrature components.

37. 11 The method according to claim 35 9 wherein the providing the signal into a first component and a second component comprises providing the signal into a sine component and a cosine component.

38. 12 The method according to claim 35 9 further comprising storing a plurality of sine values and cosine values and outputting a sine value and a cosine value individually corresponding to the phase shift angle.

39. 13 The method according to claim 35 9 further comprising storing a sine value and a cosine value individually corresponding to the phase shift angle.

40. 14 The method according to claim 39 13 wherein the scalings individually comprise multiplying one of the first component and the second component by one of the sine value and the cosine value.

41. 15 The method according to claim 35 9 wherein the combining comprises adding the scaled first component and the scaled second component.

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42. (New) The system of claim 14 wherein the receiver further comprises a phase adjuster configured to adaptively select the phase shift angle responsive to the modulated radio frequency continuous wave signal.

(per Ex. Amndt., paper # 15)

43. (New) The system according to claim 42 wherein the phase adjuster is configured to search a plurality of different phase shift angles to select the phase shift angle.

44. (New) The system according to claim 42 wherein the phase adjuster is configured to adaptively select the phase shift angle at a plurality of moments in time to provide a reduction of amplitude of the modulated radio frequency continuous wave signal at a frequency of the radio frequency continuous wave signal.

45. (New) The system according to claim 42 wherein the phase adjuster is configured to adaptively select the phase shift angle at a plurality of moments in time to provide a maximum reduction of amplitude of the modulated radio frequency continuous wave signal at a frequency of the radio frequency continuous wave signal.

46. (New) The method according to claim 35 wherein the providing the phase shift angle comprises selecting one of a plurality of phase shift angles responsive to the modulated continuous wave signal.

(per Ex. Amndt., paper #15)

47. (New) The method according to claim 46 wherein the selecting comprises selecting a plurality of different phase shift angles at a plurality of moments in time.

48. (New) The method according to claim 46 wherein the selecting comprises selecting to provide a reduction of amplitude of the modulated continuous wave signal at a frequency of the radio frequency continuous wave signal.

49. (New) The method according to claim 46 wherein the selecting comprises selecting to provide a maximum reduction of amplitude of the modulated continuous wave signal at a frequency of the radio frequency continuous wave signal.